

Wideband Microwave Amplifier ZVA-01243+

50Ω 1 to 22 GHz

The Big Deal

- Ultra wideband performance
- Usable up to 24 GHz
- Medium power, 21 dBm P1dB typ.
- Voltage regulated internally and reverse voltage protected
- Excellent directivity, 20 dB typ.



Case Style: RN2486-2

Product Overview

Mini-Circuits' ZVA-01243+ is a coaxial, ultra-wideband amplifier offering very flat gain and high dynamic range from 1 to 20 GHz. This model is capable of delivering up to +21 dBm output power at 1 dB compression with 4 dB noise figure and up to +31 dBm IP3. The model supports a wide range of high-dynamic range applications and many systems where high performance over a wide frequency range is needed. It operates on a single +8V supply and offers built-in safety features including protection against reverse bias and immunity to accidental open or short loads. The amplifier comes in a rugged, compact case (1.3 x 0.98 x 0.56") with 2.92mm connectors.

Key Features

Feature	Advantages
Ultra-wideband, 1 to 22 GHz	Enables a single amplifier to be used in a wide range of applications.
Excellent gain flatness, ± 1.0 over 1-20 GHz	Provides consistent performance across its operating frequency, minimizing the need for external equalizing networks in wideband applications.
Output power up to 24 dBm at 1 dB compression	Can be used as a driver for high power amplifiers.
Rugged design	Built-in protection against reverse bias and accidental open and short loads provides added reliability for demanding operating conditions.

50Ω 1 to 22 GHz

Features

- Output Power up to 24 dBm at 1 dB compression
- High IP3, 30 dBm typ. at 10 GHz
- Excellent gain flatness, ± 1.0 dB from 1 GHz to 20 GHz
- Fully compatible with SMA, Super SMA, and 3.5mm connectors

Applications

- WiFi
- WLAN
- UMTS
- LTE
- WiMAX
- S-band Radar
- C-band Satcom



Generic photo used for illustration purposes only

Case Style: RN2486-2

Connectors	Model
2.92mm-Female	ZVA-01243+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		1		22	GHz
Gain	1-10	10.0	13.4	—	dB
	10-16	10.0	12.9	—	
	16-20	10.0	12.8	—	
	20-22	9.0	12.3	—	
Input Return Loss	1-10	—	15.0	—	dB
	10-16	—	9.0	—	
	16-20	—	13.0	—	
	20-22	—	11.0	—	
Output Return Loss	1-10	—	16.0	—	dB
	10-16	—	14.0	—	
	16-20	—	15.0	—	
	20-22	—	16.0	—	
Output Power @ 1 dB compression ¹	1-10	20.0	23.6	—	dBm
	10-16	19.0	22.5	—	
	16-20	18.0	21.6	—	
	20-22	17.0	20.3	—	
Output IP3 ²	1-10	—	31.5	—	dBm
	10-16	—	29.5	—	
	16-20	—	27.5	—	
	20-22	—	25.0	—	
Noise Figure	1-10	—	5.0	—	dB
	10-16	—	3.9	—	
	16-20	—	5.0	—	
	20-22	—	6.4	—	
Device Operating Voltage (V _{DD})			8	9	V
Device Operating Current (I _{DD})			170	280	mA

1. Current increases at P1dB.

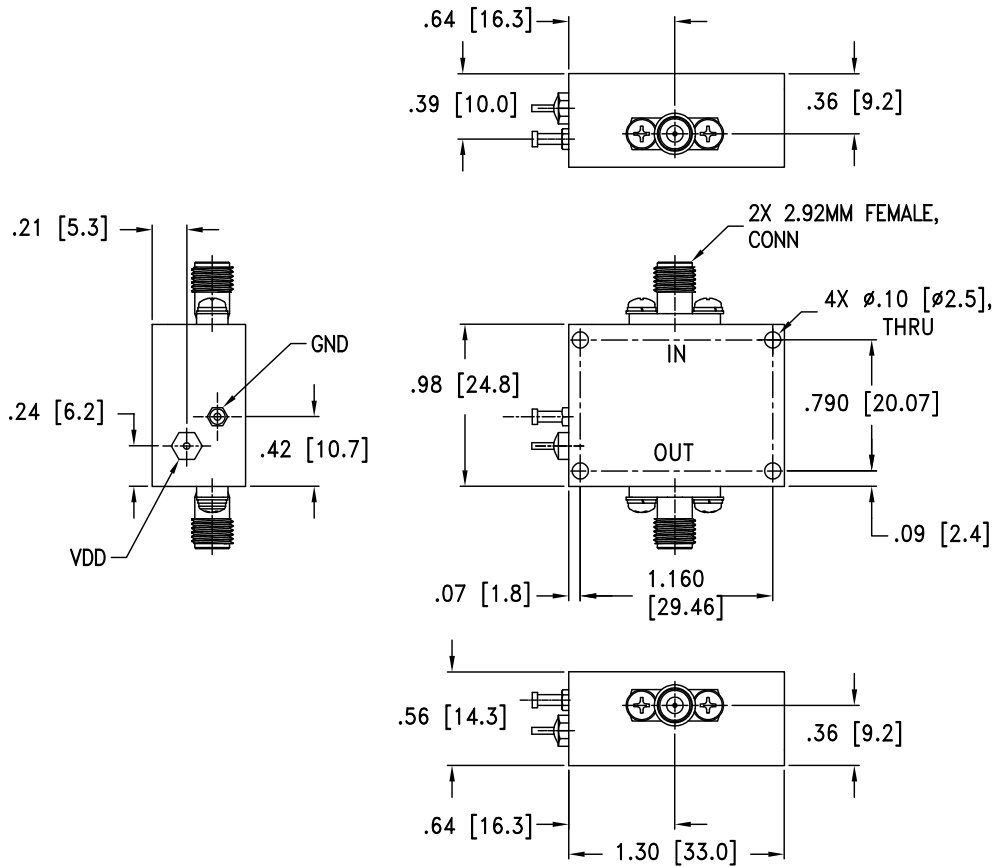
2. Two tones, spaced 1 MHz apart, 0 dBm/tone at output.

Absolute Maximum Ratings³

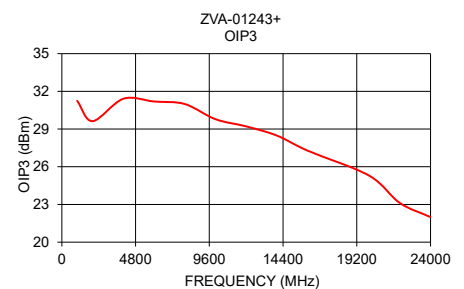
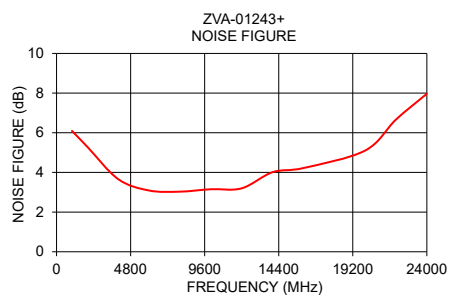
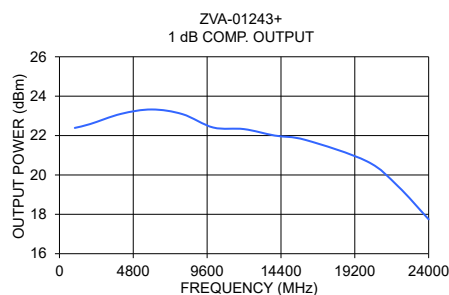
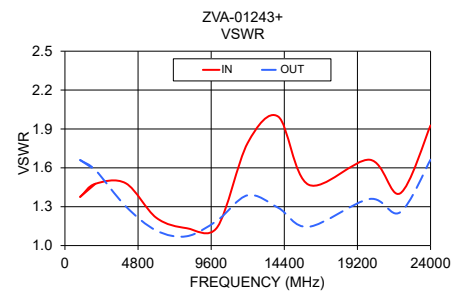
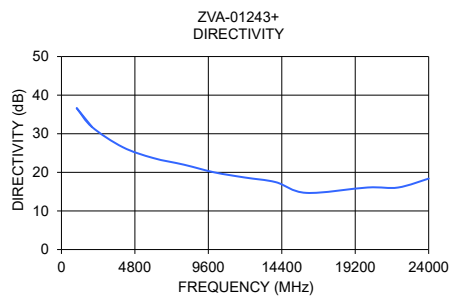
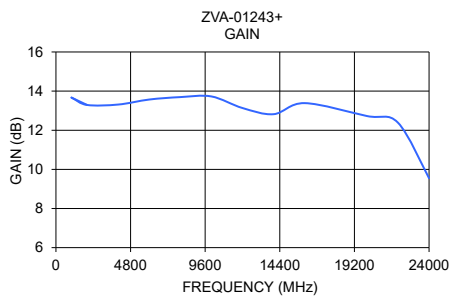
Parameter	Ratings
Operating Temperature (base-plate)	-40°C to 65°C
Storage Temperature	-55°C to 100°C
Total Power Dissipation	2.5W
Input Power (CW), V _d =8V	+17 dBm
DC Voltage	9V

3. Permanent damage may occur if any of these limits are exceeded.
Electrical maximum ratings are not intended for continuous normal operation.

Outline Drawing



FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT COMPR. (dBm)	OUTPUT IP3 (dBm)
			IN	OUT			
1000	13.67	36.61	1.38	1.66	6.09	22.39	31.24
2000	13.29	31.74	1.48	1.58	5.29	22.58	29.63
4000	13.31	26.53	1.48	1.30	3.66	23.10	31.41
6000	13.57	23.71	1.21	1.12	3.09	23.32	31.19
8000	13.69	21.99	1.13	1.07	3.03	23.09	30.99
10000	13.73	19.99	1.14	1.19	3.15	22.41	29.78
12000	13.14	18.65	1.79	1.39	3.20	22.33	29.21
14000	12.82	17.47	2.00	1.29	4.01	22.00	28.48
16000	13.39	14.68	1.47	1.14	4.22	21.78	27.28
20000	12.73	16.08	1.66	1.36	5.10	20.69	25.30
22000	12.39	16.07	1.40	1.26	6.67	19.43	23.12
24000	9.55	18.39	1.93	1.66	7.97	17.75	21.99



Additional Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

